

AMENDMENTS TO THE CLAIMS:

Claim 1 (Currently Amended): A network node comprising:

a first network interface;

a cross-connect switch coupled to the first network interface; and

a first wireless interface ~~and a first multi-medium network interface~~ coupled to the cross-connect switch;

a first TDM Framer/Deframer coupled to the first wireless interface and configured to deframe a first TDM frame from the first network interface;

a second TDM Framer/Deframer coupled to the first wireless interface and configured to form a second TDM data frame; and

a link quality management unit configured to adapt one or more parameters of the first wireless interface.

Claim 2 (Canceled)

Claim 3 (Currently Amended): The network node of claim 1 ~~2~~, wherein the first wireless interface is a RF interface.

Claim 4 (Currently Amended): The network node of claim 1 ~~2~~, wherein the first wireless interface is a free-space optics interface.

Claim 5 (Currently Amended): The network node of claim 1 ~~2~~; further comprising a second wireless interface coupled to the cross-connect switch ~~wherein the first multi-medium network interface further comprises a second wireless interface.~~

Claim 6 (Original): The network node of claim 5, wherein the first wireless interface is an RF interface and the second wireless interface is a free-space optics interface.

Claim 7 (Original): The network node of claim 1, further comprising a TDM user interface coupled to the cross-connect switch and configured for data using time-division multiplexing.

Claim 8 (Original): The network node of claim 7, wherein the TDM user interface comprises an optical interface.

Claim 9 (Original): The network node of claim 7, wherein the TDM user interface comprises a wireless interface.

Claim 10 (Original): The network node of claim 7, wherein the TDM user interface comprises a copper wire interface.

Claim 11 (Canceled)

Claim 12 (Currently Amended): The network node of claim 1 wherein the cross-connect unit is a Packet/TDM cross-connect unit configured to process TDM data and packet data.

Claim 13 (Original): The network node of claim 12, further comprising a packet user interface coupled to the cross-connect switch and configured for packet based data.

Claim 14 (Currently Amended): The network node of claim 13, wherein the Packet/TDM cross-connect unit further comprises: a packet switch coupled to the packet user interface; and a TDM switch coupled to the TDM user interface.

Claim 15 (Canceled)

Claim 16 (Currently Amended): The network node of claim ~~1~~ ~~5~~, further comprising a first dynamic multiplexer/demultiplexer coupled to the first TDM Framer/Deframer and configured to separate data from the first TDM data frame into TDM data and packet data.

Claim 17 (Currently Amended): The network node of claim 16, wherein the Packet/TDM cross-connect switch further comprises a TDM switch coupled to the first dynamic multiplexer/demultiplexer and configured to receive a TDM THROUGH payload and a TDM DROP payload from the first dynamic multiplexer/demultiplexer.

Claim 18 (Original): The network node of claim ~~14~~ 17, wherein the TDM switch is configured to receive a TDM ADD payload from the TDM user interface.

Claim 19 (Original): The network node of claim 18, wherein the TDM switch is configured to: send the TDM THROUGH payload and the TDM ADD payload to a second dynamic multiplexer/demultiplexer; and send the TDM DROP payload to the TDM user interface.

Claim 20 (Currently Amended): The network node of claim 19, wherein the Packet/TDM cross-connect switch further comprises a packet switch coupled to the first dynamic multiplexer/demultiplexer.

Claim 21 (Original): The network node of claim 16, further comprising a packet switch coupled to the first dynamic multiplexer/demultiplexer and configured to receive a packet THROUGH payload and a packet DROP payload from the first dynamic multiplexer/demultiplexer.

Claim 22 (Original): The network node of claim 21, further comprising a packet user interface and wherein the packet switch is configured to receive a packet ADD payload from the packet user interface.

Claim 23 (Original): The network node of claim 22, wherein the packet switch is configured to: send the packet THROUGH payload and the packet ADD payload to a second dynamic multiplexer/demultiplexer; and send the packet DROP payload to the packet user interface.

Claim 24 (Currently Amended): The network node of claim 1, wherein the first wireless interface ~~multi-medium network interface~~ comprises: a physical layer interface coupled to the cross-connect switch; an optical transceiver coupled to the physical layer interface and configured to convert an outgoing data stream from an outgoing electrical signal to an outgoing optical signal; a media abstraction unit coupled to the optical transceiver and configured to reframe the outgoing data stream from the outgoing optical signal to a second outgoing electrical signal suited for wireless transmission; and a first wireless unit coupled to the media abstraction unit and configured to convert the second outgoing electrical signal to a first outgoing wireless signal.

Claim 25 (Original): The network node of claim 24, wherein the first wireless unit is also configured to convert an incoming wireless signal to a first incoming electrical signal.

Claim 26 (Original): The network node of claim 25, wherein the media abstraction unit is configured to convert the first incoming electrical signal to an incoming optical signal.

Claim 27 (Original): The network node of claim 26, wherein the optical transceiver is also configured to convert an incoming optical signal to a second incoming electrical signal.

Claim 28 (Original): The network node of claim 27, further comprising a second wireless unit coupled to the media abstraction unit configured to convert the second outgoing electrical signal into a second outgoing wireless signal.

Claim 29 (Original): The network node of claim 28, wherein the first wireless unit is a RF wireless unit and the second wireless unit is a free-space optics unit.

Claim 30 (Canceled)

Claim 31 (Currently Amended): The network node of claim ~~1 30~~, wherein the link quality management unit comprises a transmission power control unit.

Claim 32 (Currently Amended): The network node of claim 31, wherein the transmission power control unit 1310 is configured to adapt the transmission power of the first wireless interface ~~multi-medium network interface~~.

Claim 33 (Original): The network node of claim 30, wherein the link quality management unit comprises a modulation control unit.

Claim 34 (Original): The network node of claim 33, wherein the modulation control unit comprises a signal quality detector configured to measure a signal quality of an incoming data stream.

Claim 35 (Original): The network node of claim 33, wherein the modulation control unit is configured to adapt the modulation of an outgoing data stream.

Claim 36 (Currently Amended): The network node of claim ~~1~~ 30, wherein the link quality management unit further comprises: an error correction code encoding unit configured to add redundancy to an outgoing data stream; and an ECC level control unit coupled to the error correction code encoding unit.

Claim 37 (Original): The network node of claim 36, wherein the ECC level control unit controls the amount of redundancy added by the error correction code encoding unit.

Claim 38 (Currently Amended): The network node of claim ~~1~~ 30, wherein the link quality management unit further comprises an error correction code decoding unit configured to remove redundancy of an error correction code on an incoming data stream.

Claim 39 (Currently Amended): The network node of claim 1, wherein the first network interface is a second wireless interface ~~multi-medium network interface~~.

Claim 40 (Currently Amended): The network node of claim 1, further comprising a second wireless interface ~~multi-medium network interface~~ coupled to the cross-connect switch.

Claim 41 (Currently Amended): The network node of claim 40, further comprising a third wireless interface ~~multi-medium network interface~~ coupled to the cross-connect switch.

Claim 42 (New): A network node comprising:

- a first network interface;
- a cross-connect switch coupled to the first network interface;
- a first wireless interface coupled to the cross-connect switch;
- a first TDM Framer/Deframer coupled to the first wireless interface and configured to deframe a first TDM frame from the first network interface;

a second TDM Framer/Deframer coupled to the first wireless interface and configured to form a second TDM data frame, wherein a payload of said TDM frame is a non-integer multiple of a base bandwidth;

a transmission power control unit configured to adapt the transmission power of the first wireless interface;

a modulation control unit configured to measure a signal quality of an incoming data stream and further configured to adapt the modulation of an outgoing data stream; and

an error correction code encoding unit configured to add redundancy to the outgoing data stream.